

Attorney Docket No. 13DV-12695-7 (21635-0018-1)
Application No. 10/715,783

C) AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions and listings of the claims in the application.

1 – 33. (cancelled)

34. (previously presented) A coated turbine engine component comprising:
an airfoil section, the airfoil section comprising:
an airfoil substrate comprising a nickel-base superalloy and having a free sulfur content and a combined sulfur content, wherein the free sulfur content plus the combined sulfur content equals total sulfur content, wherein the free sulfur content is more than 0 but less than about 1 part per million by weight; and
a protective layer at a surface of the airfoil substrate.

35. (currently amended) The component of claim 34, wherein the free sulfur content is less than 1 percent part per million by weight.

36. (previously presented) The component of claim 35, wherein the protective layer comprises a platinum aluminide layer.

37. (previously presented) The component of claim 36, wherein the airfoil substrate has a free sulfur content of less than 0.5 parts per million by weight.

38. (previously presented) The component of claim 36, wherein the airfoil substrate has a free sulfur content of 0.2 parts per million by weight.

39. (previously presented) The component of claim 36, wherein the turbine

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engine component is a turbine blade and the airfoil section is a turbine blade airfoil;

40. (previously presented) The component of claim 36, wherein the turbine engine component is a turbine vane and the airfoil section is a turbine vane airfoil;

41. (previously presented) The component of claim 37, wherein the turbine engine component is a turbine blade and the airfoil section is a turbine blade airfoil;

42. (previously presented) The component of claim 37, wherein the turbine engine component is a turbine vane and the airfoil section is a turbine vane airfoil;

43. (previously presented) The component of claim 38, wherein the turbine engine component is a turbine blade and the airfoil section is a turbine blade airfoil;

44. (previously presented) The component of claim 38, wherein the turbine engine component is a turbine vane and the airfoil section is a turbine vane airfoil;

45. (previously presented) A coated article, the article comprising:
a substrate, the substrate having combined sulfur and free sulfur, wherein the free sulfur plus the combined sulfur equals total sulfur, the substrate comprising a nickel-base superalloy having free sulfur content of more than 0 but less than about 1 part per million by weight and at least one scavenger element, at least some of the at least one scavenger element being chemically bound with sulfur as combined sulfur;
and
a protective layer at a surface of the substrate, the protective layer comprising a platinum aluminide diffusion layer.

46. (previously presented) The coated article of claim 45, wherein one of the at

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least one scavenger element is hafnium.

47. (previously presented) The coated article of claim 45, wherein one of the at least one scavenger element is zirconium.

48. (previously presented) The coated article of claim 45, wherein one of the at least one scavenger element is magnesium.

49. (previously presented) The coated article of claim 45, wherein one of the at least one scavenger element is calcium.

50. (previously presented) The coated article of claim 45, wherein the coated article is a component of a gas turbine engine.

51. (previously presented) The coated article of claim 50, wherein the component is a turbine vane.

52. (previously presented) The component of claim 50, wherein the component is a turbine blade.

53. (previously presented) The component of claim 50, wherein the component is a turbine nozzle.

54. (previously presented) The component of claim 50, wherein the component is a combustor liner.

55. (previously presented) The component of claim 50, wherein the component is a turbine seal.

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56. (previously presented) The component of claim 50, wherein the component is an exhaust nozzle.

57. (previously presented) The component of claim 50 where the component is a shroud.

58. (previously presented) A coated article comprising:
a substrate, the substrate having a combined sulfur content and a free sulfur content, wherein the free sulfur content plus the combined sulfur content equals total sulfur content, the substrate comprising a nickel-base superalloy and having free sulfur content of more than 0 but less than 1 part per million by weight;
the substrate further including at least one scavenger element selected from the group of elements consisting of hafnium, zirconium, magnesium, calcium, and combinations thereof, wherein the at least one scavenger element is chemically bound to form the combined sulfur content; and
a protective layer at a surface of the substrate.